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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,180	12/21/2001	Robert A. Nickels	M10-02642 US	9493
128	7590	06/03/2004		
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			EXAMINER PYO, KEVIN K	
			ART UNIT 2878	PAPER NUMBER

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,180

Applicant(s)

NICKELS ET AL

Examiner

Kevin Pyo

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-19 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-19 and 22-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date, ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 9-19 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al (6,459,224) in view of applicant's Prior art Fig.3 (hereinafter Prior Art).

Regarding claims 1 and 14, Itoh et al shows in Figs. 1, 2 and 4-6 the following elements of applicant's invention: a) a plurality of emitter-receiver pairs (col.12, lines 3-13) for detecting light that was interrupted by an object moving on a conveyor (2b) when the object enters sensing zones on the conveyor, wherein each of the sensing zones is associated with one of the plurality of emitter-receiver pairs; and b) a signal conditioning module (10 in Fig.2) receiving the detected light signals from each of the plurality of emitter-receiver pairs (SB(13), S_{LS}(14L), S_{RS}(14R), S_{LL}(15L), S_{RL}(15R)), wherein the signal conditioning module multiplexes (23 in Fig.2) the received signals to individually access each of the plurality of emitter-receiver pairs and conditions the detected light signals to provide valid output signals, which are utilized to provide controlling information necessary to route the object to a proper location and prevent damage to the object from other objects as the object is being transported upon the conveyor (col.2, line 27-36).

Itoh et al differs from the claimed invention in that its device utilizes a light barrier type sensing scheme for detecting the object, whereas the claimed invention utilizes a reflective type sensing scheme for detecting an object. However, the use of a reflective type sensor for

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detecting an object is well known in the art as shown in Prior Art, and it would have been obvious to one of ordinary skill in the art to replace the light barrier type sensor of Itoh et al with the reflective type sensor in Prior Art in view of increasing flexibility in positioning sensors in the conveyor system of Itoh et al. Although Itoh et al does not specifically mention the use of a multiplexer, it appears that the switching IC (23 in Fig.2), which comprises 10 input terminals and 3 output terminals is inherently a multiplexer. If not inherent, however, it would have been obvious to one of ordinary skill in the art to utilize a multiplexer in the control circuit of Itoh et al in view of the desire to accomplish the effective performance for processing the signals from the photoelectric sensors of Itoh et al.

Regarding claims 2, 3, 15 and 16, Itoh et al in view of Prior Art clearly discloses the limitations therein.

Regarding claims 4, 5, 17 and 18, the specific distance measured by the device of Itoh et al in view of Prior Art would have been obvious to one of ordinary skill in the art in view of design requirements, the specific lens used and the desired performance, etc.

Regarding claims 6, 7, 9, 13, 19 and 22, Prior Art shows an optical emitter (70), an optical receiver (72) and an associated optical lens (64).

Regarding claims 10 and 23, although the device of Itoh et al in view of Prior Art does not specifically mention that a housing is used to contain optical elements, it would have been obvious to one of ordinary skill in the art to place optical elements in a housing in view of reducing any dusts or dirt from mounting on optical elements.

Regarding claims 11 and 24, the limitations therein are shown in Fig.5 of Itoh et al.

Regarding claims 12 and 25, although the device of Itoh et al in view of Prior Art does not specifically mention that an amplifier is used to amplify a signal from an optical receiver, it would have been obvious to one of ordinary skill in the art to use an amplifier to amplify a signal from an optical receiver in view of improving a signal to noise ratio.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is (571) 272-2445. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Pyo
Primary Examiner
Art Unit 2878

Pkk
5/30/04